

GAO

Report to Congressional Requesters

May 1991

**HIGHWAY  
DEMONSTRATION  
PROJECTS**

**Improved Selection  
and Funding Controls  
Are Needed**



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Resources, Community, and  
Economic Development Division

B-243581

May 28, 1991

The Honorable Quentin N. Burdick, Chairman  
The Honorable John H. Chafee, Ranking Minority Member  
Committee on Environment and Public Works  
United States Senate

The Honorable Daniel P. Moynihan, Chairman  
The Honorable Steve Symms, Ranking Minority Member  
Subcommittee on Water Resources,  
Transportation, and Infrastructure  
Committee on Environment and Public Works  
United States Senate

In 1991 the Congress will reauthorize the federal-aid highway program. A 5-year, \$70-billion federal-aid highway program was previously authorized under the Surface ~~Transportation~~ and Uniform Relocation and Assistance Act (STURAA) of 1987, which included \$1.3 billion for 152 demonstration projects in 38 states. This represented slightly more than a threefold increase over the \$386 million authorized for demonstration projects in 1982. Demonstration projects are generally specific construction projects, ranging in scope from paving a gravel road to building a multilane highway.

In response to your May 3, 1990, request and subsequent agreements with your offices, we examined the contributions of demonstration projects to the nation's overall highway needs. Specifically, we evaluated 66 of the 152 STURAA projects in 8 states to determine (1) their relationship to state and regional transportation plans; (2) progress and problems encountered in implementing such projects; (3) their estimated costs and impact on other highway project funding; and (4) options that the Congress may wish to consider if demonstration projects are included in the 1991 federal-aid highway program reauthorization.

## Results in Brief

Typically, the need for transportation projects is determined through a state and regional planning process, which includes the identification of potential federal and state funding sources for projects planned within the next 1 to 3 years. Because most of the demonstration projects we reviewed did not respond to states' and regions' most critical federal-aid highway needs, these projects were generally either not included in any state or regional transportation plans or were included without any identified funding. Moreover, the Congress authorized demonstration

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funds for 10 projects that would not have been eligible for federal highway program funds, since the projects were for local roads not entitled to receive federal program assistance.

Progress in starting and completing construction on the demonstration projects has been slow since specific demonstration project funds were authorized in 1987. Furthermore, \$25 million may never be used because no action has been taken on 7 of the 66 projects since 1987, and there is no provision for recapturing or using the funds for alternative transportation projects.

The funds needed to complete the 66 projects—\$1.9 billion—far exceed the federal funds authorized plus the anticipated state matching funds. Since the authorized federal funds and anticipated state match total almost \$700 million, an estimated \$1.2-billion shortfall is expected. States can use federal-aid highway program funding to address demonstration project shortfalls, and states plan to use such funds to complete some of the 66 projects. For other projects, however, the states are uncertain how they will meet the expected funding shortfalls. More states would benefit from federal program allocations than now do through the funding of demonstration projects. Our analysis shows that if the 1987 federal demonstration project funds had been provided instead to states on the basis of their percentage share of federal-aid highway program allocations, 35 states would have received an equal or greater share of federal highway funds. The remaining 15 states would have received less funds.

There are numerous options that could be used to ensure that (1) demonstration projects are better aligned with state and regional highway priorities and (2) federal funding authorized for these projects is better controlled. One option would be to limit demonstration project selection to projects already included in state and regional plans. Another option would be to limit the amount of funds authorized for all demonstration projects.

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## Background

The nation's highway network encompasses almost 4 million miles of roads. Although state and local governments have the primary responsibility for highways, the federal government provides aid for certain highways called federal-aid highways. These highways comprise about one-fifth of the nation's highways and include Interstate, Primary, Secondary, and Urban Highway Systems. The federal-aid highway program is essentially an umbrella program for providing federal assistance to

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various categorical highway and bridge programs on one of the federal-aid systems.

Transportation planning conducted at the state and regional levels is generally the first step in the development of a project. State and regional transportation agencies identify their priority projects and anticipated funding sources in multiyear plans. The transportation plans we reviewed ranged from 5 to 20 years, but identified federal or state funding was generally limited to the most important projects planned for the next 1 to 3 years.

In 1987 the federal-aid highway program was reauthorized through fiscal year 1991. Although the \$70 billion provided through the reauthorization was principally for highway system-related programs, it also included \$1.3 billion for use on 152 specific demonstration projects in 38 states. In addition to demonstration projects, the Congress designated another type of project in STURAA, referred to as priority projects. Nineteen priority projects were legislated, but generally these projects did not receive separate funding because they were to be financed through federal highway programs.<sup>1</sup>

The federal cost share for the 152 demonstration projects is 80 percent, and the 66 projects we reviewed were authorized federal funds totaling \$549 million. The states are expected to provide the 20-percent matching share. The projects we reviewed represent the universe of demonstration projects authorized in 1987, for 8 states— California, Florida, Georgia, Illinois, Louisiana, Massachusetts, New York, and Pennsylvania. We selected our states to provide a review of over 40 percent of the demonstration projects authorized in 1987, while recognizing the need for geographic balance.

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## Projects Often Not Aligned With Transportation Priorities

Generally, demonstration projects we reviewed were not considered by state and regional transportation officials as critical to their transportation needs. In slightly over half the cases, the projects were not included in regional and state plans. Of those that were included in plans, the majority were listed without any identified federal and state funding sources. According to transportation officials, the authorization of demonstration funds for these projects in 1987 increased their chances of being developed when compared with other projects that had to compete for federal program funds.

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<sup>1</sup> Four projects were designated as both a demonstration and priority project.

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Thirty-seven of the 66 projects we reviewed were not considered important enough to be included in state or regional transportation plans. Transportation officials generally omitted these projects from their plans because the projects provided limited benefits. For example, one project was to upgrade a road in a sparsely populated area. Another project involved constructing a highway interchange that would improve access to a group of local businesses.

Moreover, 10 of the 37 unplanned projects were for local roads and would not have qualified for federal highway funding unless authorized for demonstration funds. These projects were authorized \$31 million in demonstration project funds, which represents 13 percent of the \$230 million provided for unplanned projects.

Twenty-nine of the 66 projects reviewed were already included in a state or regional plan. However, only 12 were scheduled to get under way and had identified funding sources. Despite the fact that these projects already had identified funding, transportation officials noted that the authorization of demonstration funds for these projects can prove beneficial for several reasons. First, the state can redirect the funds already identified for the demonstration project to other transportation projects. Second, a later phase of the same project may be supported through the demonstration funds, thereby accelerating progress on the project.

Although the remaining 17 projects were included in plans without any identified federal or state funding sources, the demonstration designation gave them higher priority. About half of these projects were intended to address emerging or less critical transportation problems. For example, a parallel route to an existing highway was planned to enhance future economic development. The other half, however, did address critical transportation problems, according to state and regional transportation officials. But their high cost had precluded funding in the near future.

For instance, in one state the construction of a four-lane expressway was considered important for addressing a region's highway capacity problems. However, state officials said as much as \$70 million was needed for the project but was not available; thus the project was relegated to the latter years of the state transportation plan. When federal demonstration funds were authorized for this project in 1987, they proved critical in spurring the project's development.

## Many Projects in an Early Development Stage

Although \$549 million was authorized for the 66 projects, only 36 percent, or \$198 million, had been obligated by the beginning of fiscal year 1991. Most (\$162 million) of the obligated funds have been used for the 29 demonstration projects that were included in state and regional plans. Consequently, \$351 million in federal funds has been authorized but remains unobligated. Moreover, some of this money may never be used because no preliminary project development work has begun since 1987, and there are no provisions in STURAA providing for the cancellation or redirection of these funds to other projects.

This slow rate of obligation is not surprising because preconstruction activities for highway construction projects may take 5 to 7 years. These activities usually account for about 10 to 15 percent of total project costs. Since 37 of the demonstration projects were not included in plans, they are, in most cases, still undergoing early project development work, such as preliminary engineering and environmental analysis.

In addition, 54 of 66 projects—both those that were unplanned and those that were planned but had no identified funds—often had problems that might cause them to remain in the early project development stage beyond the 5- to 7-year average. These problems ranged from threatened intrusion on wetlands to citizen opposition. For example, one proposed highway construction project would cut through a low-income housing project undergoing renovation with federal funds.

None of the authorized federal funds (\$92 million) have been obligated for 22 of the 66 projects. For 15 of these projects, some type of activity, such as a project feasibility study, is under way, and the federal funds (\$67 million) authorized for these projects may eventually be used. For the remaining seven projects, however, it is unlikely that the \$25 million authorized for them will ever be obligated because there has been no project activity since 1987. Although most federal highway funds are available for 4 years, demonstration project funds are available for an unlimited time under the provisions of the 1987 act. Further, states do not have the authority to redirect demonstration project funds to other transportation projects.

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## Demonstration Projects May Be More Costly to States Than Anticipated

In two respects, demonstration projects are proving costly. First, completion costs for the projects will greatly exceed the authorized federal and anticipated state contribution. Second, if the funds authorized for demonstration projects in 1987 had instead been allocated to all states according to their percentage share of federal-aid highway program funds received, 35 states would have received an equal or greater share of funds for transportation.

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## Higher Completion Costs

Federal funds authorized and the anticipated state match for the 66 projects reviewed total nearly \$700 million. Yet, an additional \$1.2 billion is estimated to be needed to complete 51 of the 66 projects. State officials intend to rely on other federal as well as state and local funds to address about half of the \$1.2-billion shortfall. However, they are uncertain how they will obtain the additional funds needed.

State and regional transportation officials noted three reasons for the shortfall. First, reliable cost estimates were not available for most projects before they were authorized. Since a majority of demonstration projects bypassed the transportation planning process, supporting cost studies had not been done before the projects were authorized.

Second, inflation contributed to higher costs in many cases. While the overall rate of inflation has stayed in the 3.6-percent to 5.4-percent range for 1987 through 1990, highway construction costs have increased 9 percent to 10 percent over the same period.

Finally, and perhaps most significantly, state transportation officials observed that the federal funds authorized along with matching funds were apparently never intended to cover the complete cost for 23 projects, but were intended to serve as "seed money." For example, a tunnel expansion is estimated to cost over \$75 million, but demonstration project funds along with a required state match totaled only \$2.9 million. Another project, improving highway access to an international airport, will be constructed in eight phases. This project is expected to cost \$85 million, which substantially exceeds the \$23.2 million in federal demonstration funds authorized and the required \$4.6-million state match.

Thirty-two of the 51 projects with expected shortfalls will use \$651 million in federal, state, and local funds to make up the difference. Federal funds would come principally from existing federal-aid highway programs, such as programs for the urban and primary highway systems.



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For the remaining 19 projects, however, officials are uncertain how they will address an expected shortfall of \$526 million. In a few cases, demonstration projects have not been started because state officials do not want to use their highway funds to cover the expected shortfall.

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### Many States Would Benefit More From Federal Program Allocations

Demonstration funding is provided on a project-by-project basis, rather than through the federal-aid highway program allocation process. We calculated states' gains and losses on the basis of the amount of demonstration funds a state would have received if these funds had instead been distributed in accord with its share of federal-aid program allocations for highway systems.<sup>2</sup> From this analysis, we found projected funding would have improved for 21 states, remained unchanged for another 14, and decreased for the remaining 15 states. This realignment would have occurred because distribution of funds would have been based on federal highway program allocation factors, such as population, vehicle miles traveled, and land area.

Moreover, for 12 of the 14 states whose funding remained unchanged, the demonstration projects reduced their flexibility to address priority highway and bridge problems. These are states that receive minimum allocation program funds. This program was established to ensure that each state's share of apportionments from the federal-aid highway program was at least 85 percent of the percentage of estimated tax payments attributable to highway users in that state. In calculating the amount of minimum allocation funds a potentially eligible state should receive, demonstration funds are factored into the determination of whether a state has received an 85-percent share of its trust fund contributions. In other words, demonstration funds reduce the minimum allocation program funds eligible states would have received.

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### Options for Improving How Demonstration Projects Are Authorized and Funded

Our review raises a series of issues about the current approach of funding demonstration projects. Specifically, (1) more than half of the projects we reviewed (37 of 66) were not considered critical to state and regional transportation needs but were authorized federal funds totaling \$230 million, (2) the purchasing power of these funds is being eroded by a slow rate of obligation, and (3) the federal funds authorized along with the required state match is often not sufficient to complete the demonstration projects, a \$1.2-billion shortfall is expected for the

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<sup>2</sup>Our analysis was based on a composite of the Federal Highway Administration's nine apportionment formulas to obtain an estimated state average for reallocating demonstration funds.

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projects we reviewed. In addition, if the authorized funds are not used for a demonstration project, there is no provision for canceling or using these funds for alternative transportation projects.

These issues could be addressed through individual strategies, or a combination of strategies, designed to modify demonstration project selection, limit the number of demonstration projects, and change the way demonstration funds are distributed. A discussion of six possible strategies follows.

First, demonstration project selection could be limited to projects already incorporated into transportation plans, as suggested by state and regional transportation officials. They support this option because it would ensure that federal funds were channeled to those projects that they had already identified as their highest priority. However, the Congress may be reluctant to take on the additional administrative burden of ensuring projects are included in a plan. Even then, this option raises the question of what is being accomplished by legislatively authorizing projects states were already planning to do.

Second, demonstration project selection could be restricted to projects on a federal-aid system. As noted earlier, 10 of the 66 projects reviewed were not on this system; thus they generally would not have qualified for the federal funds authorized—\$31 million. Moreover, as we have previously reported, federal funds are not sufficient to adequately respond to the deterioration and congestion plaguing the federal-aid highway and bridge network.<sup>3</sup> The use of these funds for otherwise ineligible projects exacerbates the problem.

Third, future demonstration projects could be funded through existing federal-aid highway programs, thus eliminating the need for specific “project” funding. Essentially, this approach was tried in the 1987 reauthorization, when the Congress authorized 19 discrete projects—referred to as priority projects—that were usually not accompanied by specific project funds. Instead, states were granted the authority to use almost any category of federal-aid highway program funds to support these projects. This option would preserve the congressional prerogative of supporting specific projects without requiring the authorization of additional federal funds. Conversely, this option could be perceived as

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<sup>3</sup>Preserving the Interstate System (GAO/T-RCED-90-68, Apr. 24, 1990), Operations of and Outlook for the Highway Trust Fund (GAO/T-RCED-90-79, May 9, 1990), and Reshaping the Federal Role Poses Significant Challenge for Policy Makers (GAO/RCED-90-81A, Dec. 28, 1989).

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reducing state authority to select projects, but the ultimate decision to fund projects would remain with the state.

Fourth, federal funding for demonstration projects could be constrained through an overall funding cap. This action would set financial limits on the amount of federal funds that could be used for all highway demonstration projects. It could prevent a dramatic increase in demonstration project funding, as occurred during the 1980s. With a funding cap, however, projects previously bypassed by state officials chiefly because of their high cost would probably remain uncompetitive. Alternatively, seed money could be authorized for such projects even under a spending cap, but this approach would still leave a substantial financial shortfall. Or, a program for high-cost projects, such as one provided for in the administration's 1991 reauthorization proposal, could be implemented in conjunction with a funding cap.<sup>4</sup>

Fifth, the distribution of demonstration funds could be based on the percentage of federal-aid highway program allocations that a state receives, rather than distributed on a project-by-project basis. Otherwise, as previously noted, our analysis shows most states experienced limited financial benefits from the demonstration funds authorized, compared with the amount of funds they would have received if the monies had been distributed in line with federal-aid highway program funds. Further, a provision could be included that would prevent any future demonstration funds from reducing the amount of minimum allocation funds that a state would have otherwise received.

Finally, the federal share for demonstration projects could be substantially reduced from the 80 percent currently provided. Such a reduction would complement the administration's 1991 reauthorization proposal, which provides for a reduction in the federal share for most federal-aid highways. While this option would obviously place an even greater financial burden on the states, a higher state contribution would validate state support for the projects.

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## Conclusions

Although the federal funds authorized in 1987 for demonstration projects was more than three times the previous authorization level, it is clear that the funds will fall far short of the amount needed to complete

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<sup>4</sup>The administration's 1991 reauthorization proposal includes a new program aimed at funding large-scale, high-cost projects that increase capacity on interstate highways or roads connecting to interstates.

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the projects. And, perhaps equally important, the funds were often authorized for projects that were not a state or regional priority. In some cases, local road projects that are not a part of the federal-aid highway system would not have been eligible for federal funds in the absence of their demonstration designation.

Since transportation needs far outstrip available resources, we believe that federal funds should be targeted to the most significant transportation problems facing the nation. We recognize that some existing demonstration projects could be classified as nationally significant. Nevertheless, we believe there may be better program alternatives to selecting and funding such projects, which could include establishing a more selective, controlled, and equitable funding method. We also believe that the funds authorized for projects that have been inactive since 1987, and are likely to remain so, should be redirected to other transportation projects or be returned to the Treasury. As noted earlier, \$25 million authorized in 1987 for seven demonstration projects may never be used because there has been no project activity.

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## Matters for Congressional Consideration

In the future, if the Congress funds highway demonstration projects, it should consider adopting certain requirements, or a combination of requirements, to improve and control selection, such as (1) limiting project selection to projects already incorporated into transportation plans, (2) restricting demonstration project selection to projects on a federal-aid highway system, (3) eliminating the authorization of specific funds for demonstration projects but permitting specific projects to be funded from federal-aid highway programs, (4) imposing an overall funding cap for such projects, (5) allocating demonstration funds in line with a state's share of total federal-aid highway funds, and (6) reducing the federal share for demonstration projects.

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## Recommendation to the Congress

We recommend that the Congress provide for the cancellation or redirection of federal funds for any existing or future demonstration projects that remain inactive 4 years after their authorization.

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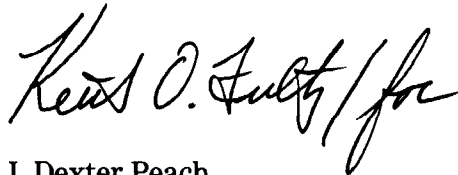
We performed our work between May 1990 and January 1991 in the 8 states that had the 66 projects, several metropolitan planning organizations within each of these states, and appropriate federal highway

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offices. Our work was done in accordance with generally accepted government auditing standards.

We discussed the information in this report with state and federal transportation officials. They agreed with the facts as presented in this report. However, as agreed with your offices, they did not provide us with official written comments on this report. As agreed with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies of this report to the Secretary of Transportation; the Administrator, Federal Highway Administration; interested congressional committees; the Office of Management and Budget; and participating states and metropolitan planning organizations. We will also send copies to other interested parties upon request.

Our work was performed under the direction of Kenneth M. Mead, Director, Transportation Issues, who can be reached at (202) 275-1000. Other major contributors to this report are listed in appendix 1.

A handwritten signature in black ink, appearing to read "Kenneth O. Peach" with a stylized flourish at the end.

J. Dexter Peach  
Assistant Comptroller General

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